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THE AGRICULTURAL STUDENT

A MONTHLY MAGAZINE DEVOTED TO AGRICULTURAL EDUCATION



NOVEMBER, 1909

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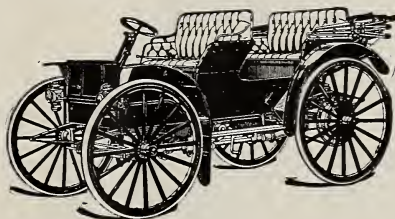
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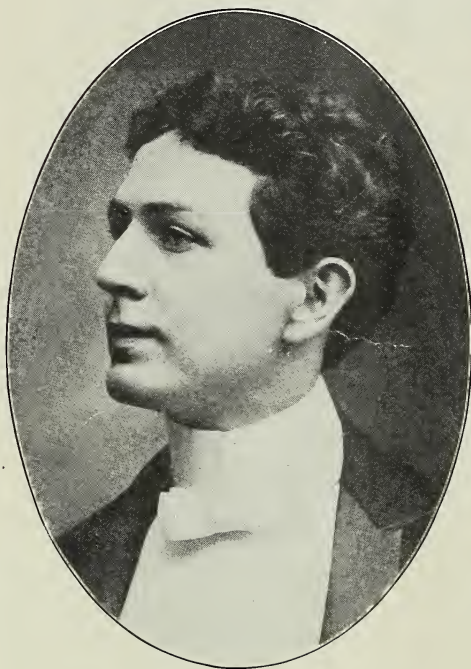
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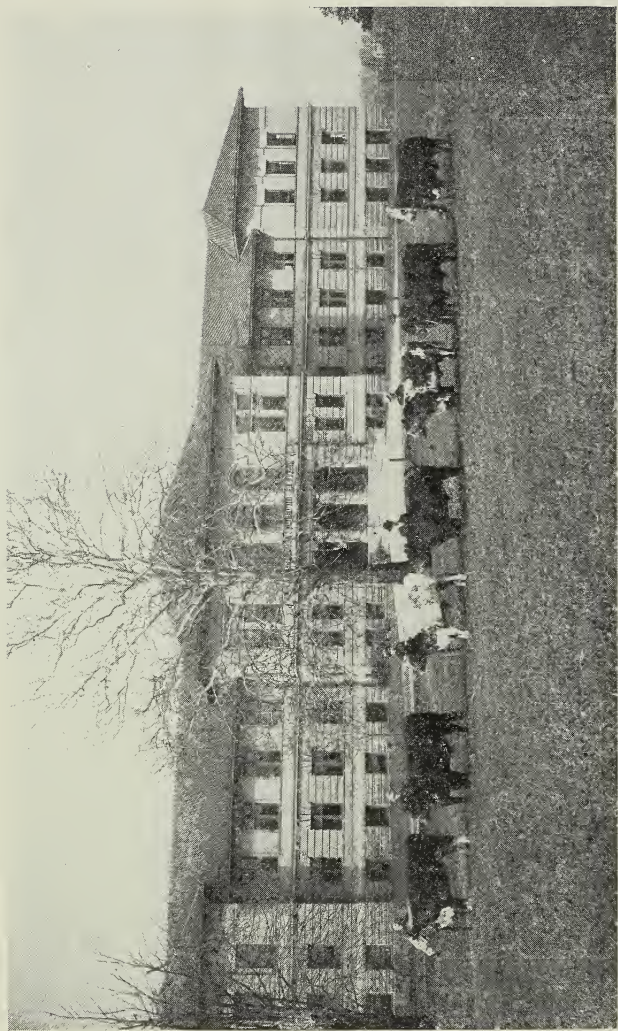
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The Pfeifer Show Print Co., Columbus. O.





TOWNSHEND HALL

THE AGRICULTURAL STUDENT

Vol. XVI. OHIO STATE UNIVERSITY, COLUMBUS, NOVEMBER, 1909 Number 2

Presentation of Townshend Memorial Tablet

Presentation Speech by John F. Cunningham

Fellow Alumni and Friends: On this occasion we meet to present to the University a simple material tribute to the work and worth of Dr. Norton Strange Townshend, and to dedicate it to his memory.

Here was a man who was remarkable in many ways. But the keynote of his entire life was service—service rendered wherever he thought it was most needed. His every thought was directed outward. Seldom did he think of self. In so many different capacities did he render service that even those who knew him best build their estimates of his worth upon many different foundations. But service is always the keynote, and the estimates are uniformly high.

Born at Clay Coaton, England, December 15, 1815, he came to America with his parents when quite young and settled at Avon, Lorain County, Ohio. At the age of nineteen he taught a district school. The following year he took up the study of medicine, at the same time applying himself to Latin, Greek and French. He entered the College of Physicians and Surgeons at New York in 1839, and in 1840 received the degree of Doctor of Medicine from the University of New York, of which the college just named was a part.

Shortly afterward he went to Europe to visit hospitals and study European

medical methods. At the same time he represented the Ohio Anti-Slavery Society at the World's Anti-Slavery Convention, held in London, England, in June, 1840. He returned to America and began the practice of medicine in Lorain County, Ohio, in 1841, continuing until 1848, when he was elected to the Ohio House of Representatives on the Free Soil ticket.

So close were party lines drawn at that time and so evenly were the two leading parties divided in the House that the balance of power was held by Dr. Townsend and Colonel Morse of Lake County, both representing the Free Soil or Abolitionist party. This great power was used to secure the repeal of the so-called "black laws" and the election of Salmon P. Chase to the United States.

In 1850 Dr. Townshend was elected a member of the convention which drafted the Ohio State Constitution.

In the fall of the same year he was elected to represent his district in the Thirty-second Congress of the United States, where he served one term.

In 1853 he was elected to the Ohio State Senate, where he instituted and was largely instrumental in securing the enactment of a measure establishing the institution for the care of feeble-minded youth. Subsequently he was a trustee of this institution for twenty-one years.

In 1854, with Messrs. Fairchild and Bascom, of Oberlin, and Dr. John S. Newberry, of Cleveland, he attempted to start an agricultural college. Winter courses of lectures were given for two seasons in Oberlin and one season in Cleveland.

He served a six-year term on the Ohio State Board of Agriculture, beginning with 1858, and later served on the same board during 1868-1869.

Early in 1863 he was appointed medical inspector in the Union army, with the rank of lieutenant colonel, and served throughout the war.

About the same time, together with Professor Joseph Henry, of the Smithsonian Institution, and Dr. John Torrey, of New York, he was made periodical inspector and examiner of coinage of the United States mint at Philadelphia.

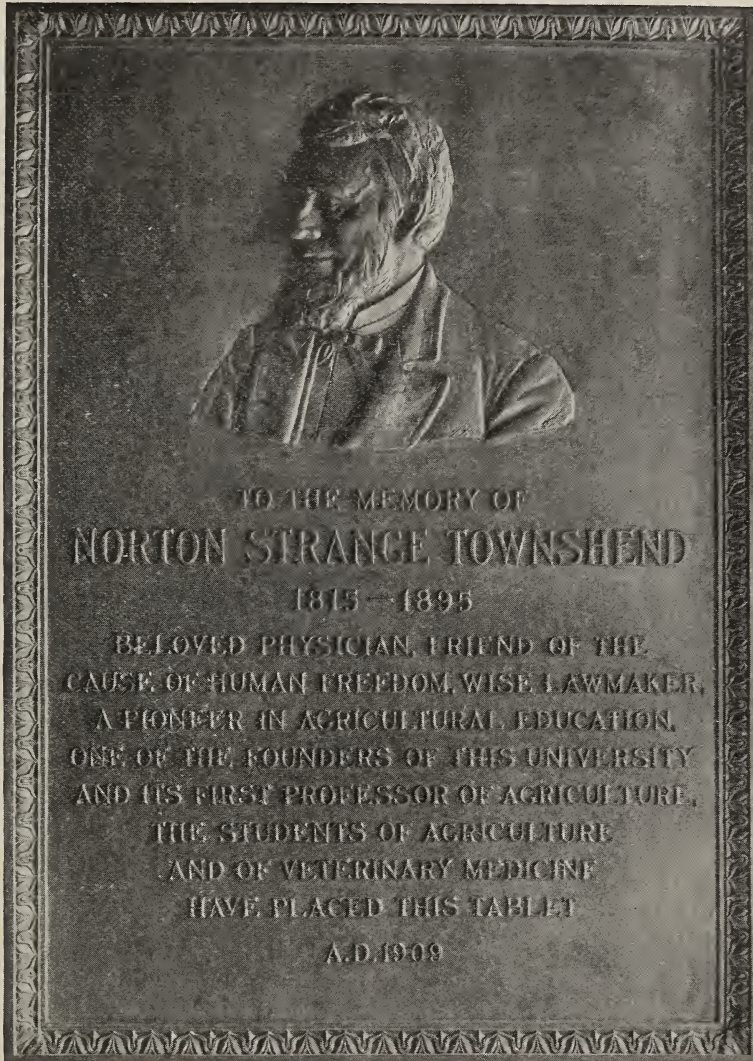
He took a very prominent part in the agitation promoting the measure of July 2, 1862, providing a national endowment for state colleges to teach agriculture and the mechanic arts and in securing the acceptance of the provisions of the act by the Ohio Legislature. He became professor of agriculture in the Iowa State College in 1869, and was appointed a trustee of the Ohio Agricultural and Mechanical College in 1873. Upon the urgent solicitation of his colleagues on the board, he accepted the chair of agriculture, botany and veterinary medicine in the new Ohio college and maintained his connection with the institution through its several stages of development until his death on June 13, 1895.

As shown by the facts of this brief biography, Dr. Townshend's life work was broad and many-sided, but the great keynote of service ever remained predominant. A man of varied attainments, he did not stand upon ceremony.

He was ever ready to render the benefits of his medical training to beast as well as man. His was a great and kindly heart, abiding in a great and able body, dominated by a trained and resourceful mind.

Whether he was possessed of great physical and moral courage or whether he knew no fear has often been debated by those who knew him intimately, but the fact remains that he was never known to hesitate in the path where duty pointed. When a young man he walked across the state from the lake to the river and back again that he might attend lectures on medicine; in the State Legislature he stood practically alone and buffeted the united forces of the two dominant political parties until the iniquitous "black laws" were repealed and until he secured the election of a United States Senator who was opposed to the institution of human slavery; in Congress he made such powerful anti-slavery speeches that he was many times threatened with bodily violence. But he was strong and unafraid. He flung defiance to his foes and critics and bade them come to meet him half way, declaring that his constituents were fully capable of choosing their representative and that he would not be dictated to by the representatives of a system that stood for whips and manacles and chains. He was a heroic figure in a strenuous time.

Throughout his life he impressed upon those with whom he came in contact his unswerving integrity. He would permit no false nor misleading statement to pass his lips. This characteristic is largely accountable for his rare power as an instructor. He never limited himself to one particular subject to such an extent that he could be ranked as a scientific authority, but he



TOWNSHEND MEMORIAL TABLET

had the breadth of learning and the varied experience that go to make up an ideal instructor. Like Mark Hopkins, all he needed was a pupil to comprise a college.

But, more than all else, this tablet will bear tribute to him as a pioneer in agricultural education.

With Pugh, of Pennsylvania, and Turner, of Illinois, he comprised the pioneer trinity in this class of education, which has grown to such magnificent proportions. All nations and all ages pay increasing honor to the pioneer—that man who blazes the way for

advancement, who strikes the chords of progress with the first great awakening sweep, and if Dr. Townshend could be here today I am firm in the belief that he would prize more highly than any other honor the name of pioneer in agricultural education in America; and more highly than this tablet in eternal bronze would he prize and cherish the thought that it was presented by the students who have taken advantage of the educational opportunities that he was so instrumental in promoting.

Address of Acceptance

By Walter T. Sears

The greatness of this University can never transcend the lives of her sons and daughters, of her men and women living and dead. What they have done and are doing, bravely and unselfishly, in her name—what they have given and are giving, cheerfully and uncomplainingly, for her well-being, there can be no other honest measure either of her renown or her service.

For the University is not the campus, or the halls, or the budget; it is not a book of rules or a course of lectures, or a row of desks. These things are but the instrumentalities of a higher power, which finds its expression in the personality of the teacher and the student.

Rather, the University is a spirit, which is at once the embodiment of a moral and intellectual ideal of the highest and noblest life—a spirit of tradition, which cherishes the self-sacrifice of incorruptible scholarship—a spirit of love, which delights in serving humanity—a spirit of truth, which defies the restraints of tyranny and wrong

and cleaves to the ultimate laws of right—a spirit of faith, which looks beyond the narrow walls of existence to the unvaulted ceiling and attaches a vision of the infinite self sacrifice, love, truth and faith.

The life of the man whose beautiful and enduring memory we celebrate today was luminous with this spirit.

He dedicated his talent and his devotion to the high calling of education. He was a pioneer in the development of agricultural training, to which he brought a mind so singularly well prepared and a nature so generously gifted, with the capacity to inspire others that he gave to this great work its first impetus and direction in this state.

He not only brought to this task the original thought of a discriminating scholarship, but he also brought to it the splendor of a good name. His character was incorruptible as were the truths which he taught.

He lived among us a long, noble and beautiful life, rich in that spirit of ser-

vice and self-sacrifice and love and truth and faith which constitute the abiding glory and greatness of this or any other university.

Such a life endureth forever; though its earthly symbol may decay, it still speaketh. It is among us here today, giving to this hall and to this college its real purpose, its high meaning and its living faith.

I am grateful that the rare spirit of this life touched me as an undergraduate as it did hundreds of men who came under its ministrations.

We do ourselves honor to cherish

such a life. Let us enshrine it in our hearts and exalt it as an example by which our own lives shall be directed, uplifted, sweetened and ennobled.

In behalf of the trustees of Ohio State University, I have the honor to accept this gift of love and remembrance, and I desire to assure the Alumni, whose loving tribute it is, that it will be preserved in the highest esteem and veneration and that the sentiment which prompted it and all similar memorials meets our full sympathy and appreciation.

Co-operation in Road Improvement

By H. M. Call

The subject of roads has been discussed since the establishment of the first government roads up to the present time and is a subject of great importance to the people of this country.

There is no problem that comes closer to the majority of the rural population than the matter of caring for the roads, and since the coming of the automobile this fact has been much intensified, especially upon the city dwellers.

In some parts of the state much has been done and is being done in the way of improvement, but how numerous are the places where the people follow the same old rut for at least a part of the year. It becomes a matter of habit and is considered as one of the many obstacles which stand in the way and is beyond their means to remedy.

It is an unquestionable fact that good roads are a good thing for a community and there are many miles in every district that must be cared for and improved. The question arises among the people, how can this be done at a rea-

sonable cost? Nothing can be accomplished without work and improvement in any line of work can only be accomplished by intelligent efforts. The improvement of public highways can likewise only be done by judicious use of labor and capital and the hearty co-operation of all concerned. Co-operation and intelligent efforts seem to be the practical solution of the problem. In this case all interests are mutual. Why not work together to secure this great improvement?

It is often stated that we cannot afford to build good roads; on the other hand, why not ask the question: Can we afford to be without them? The time and money saved in marketing products, besides many other things which must be taken into consideration, would pay for the expense of ordinary road improvement, aside from the unsightly appearance of a muddy, deep-rutted road. With the coming of the rural free mail delivery and the centralized school, the greater is the necessity

of good roads. Many a rural mail carrier and driver of school wagons has come to realize this fact, especially during the winter and spring months. Neither does it add to the attractiveness of the country to be practically cut off from the surrounding country by impassable roads. Aside from the profitable standpoint of the situation, they are necessary for the pleasure and convenience of the people.

Many laws have been passed from time to time regarding the duty of the individual in relation to road work and legislatures have appropriated money to quite a large extent, but what does all this amount too if we do not have co-operation and efficient work done in all the departments concerned; from commissioners, trustees, and road superintendents to each individual? A great deal depends upon the superintendent, because he has full charge of the work and there is a tendency on the part of a great many to get off as easily as possible, thus making it difficult to get value received out of the funds. This is due largely to lack of interest on the part of the individual.

It is not always necessary to go to the expensive operation of paving or macadamizing all of the roads, because it is impracticable from an economic standpoint. Of course this method produces best results and should be done where practicable, but there are many sections of the country where the roads could be materially improved by the frequent and judicious use of such common and cheap implements as the King Drag and ordinary road scraper. This is a cheap and simple plan which can be practiced anywhere and produces marked results, especially where the soil is of the right character. By the distribution of these implements throughout the township it would af-

ford an opportunity for local co-operation not possible in any other system.

With the enormous mileage of public roads in this country, which has been somewhat accurately estimated at two million one hundred and fifty-two thousand miles, and the fact that only eight per cent. of the mileage has been improved, shows that systematic methods must be practiced. Considering the fact that road improvement has been in process of construction for many years and immense sums of money have been spent, it becomes evident that the results obtained have been wholly inadequate to the amount of money expended and that the mileage is so great that some practical method must be resorted to. Roads must be classified and improved according to their importance. With such an immense mileage it calls for the co-operation of the nation, state, county and township

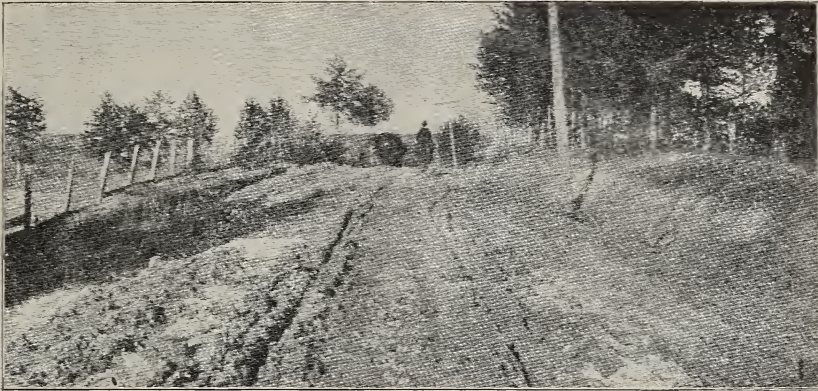
The construction of object lesson roads, such as earth, sand, clay, gravel, macadam, etc., by the government in co-operation with local authorities, has been practiced to some extent. The endeavor has been made to reduce the cost of construction to the lowest point consistent with efficiency, because this is the chief obstacle in the way of their general adoption.

Government participation in road conventions and the organizations of road associations has been considerably curtailed during the past few years. There is, however, a field of real usefulness to be received by means of speakers and lecturers. The good road organizations serve a useful purpose in arousing the people to a realization of the need for better roads, how to get them and what they will cost. Beneficial results might also be produced in a co-operative system of lectures in en-

gineering schools throughout the country, as the demand for highway engineers is in excess of the supply.

Many failures in road building are due not so much to a general disregard of standard methods of construction as to serious mistakes in some particular feature of the work, such as the use of

in the extension of hard and durable roads. Oftentimes where the people are willing to expend money for the improvement of their highways, it frequently happens that, owing to inexperience and lack of organization, the money is partially or nearly totally wasted.



BEFORE REPAIRING

inferior material. In all such cases expert examination and advice will go far toward enabling the local officials to remove the difficulty. There is a steadily growing demand for information as to the best method of road construction. Taking the country as a whole, there is probably no phase of development in which we are so backward as

The Office of Public Roads is striving to bring about a general and uniform improvement of the country roads. A co-operative plan has been sought with the Geological Survey for the purpose of indicating the various classes of roads on topographical maps issued by the survey. Co-operation with

(Continued on page 27.)



AFTER REPAIRING

Agriculture in the South and Its Relation to the Negro

By O.W. R.

Agriculture is the greatest industry in the South, and cotton is the greatest agricultural product; hence, to a greater or less extent, we see the whole area composing the Southern States depending more or less on the production of this crop. When we hear of a very short cotton crop about all it means to the North is a little rise in price in finished cotton goods, as the price of the staple has a direct influence on price of the finished product. The demand for cotton goods being almost constant, a short crop is always followed by a rise in price. In the South, however, a shortage of this crop is of vital importance. All classes feel its effect. Most business is done on a credit basis, and a great many farmers, especially negroes, are about one year behind in paying bills. Thus when a very short crop is gathered the farmers are unable to meet their debts, it follows that merchants make poor collections, and in some cases, being unable to met their obligations, have to make an assignment. One very short crop in five years can be stood by the average, or even below the average, farmer, but about eight years ago there came into the field a new obstacle which promised a very short crop every year—I refer to the pest known as the cotton boll weevil.

This pest, which is the greatest known to the cotton plant, was first noticed about 1843 in Mexico, and rendered cotton production by the latter half of the nineteenth century unprofitable in that country. Although we can get very little light on the subject from Mexico, it is sure that cotton production in that country is now little carried on, where-

as in the earlier part of the last century it was appreciable. Texas saw the danger approaching, and about the year 1900 an appropriation was asked for with which to hold the weevil from crossing the border line. The Department of Agriculture evidently did not realize the danger, and nothing was done. The weevil was soon over, and in the southern part of the state did great damage as early as 1903. Traveling through this section one could see many idle gins in October. These in previous years had been running from September until or after Christmas. In many instances the yield was reduced from 50 to 500 per cent. Land values in this section took a temporary slump. The government finally saw the danger, and went to work at once. Many times as much money has been spent to eradicate the weevil than would have been necessary to spend had the matter been taking up at the time when it was crossing the border, and as yet nothing but cultivation methods have helped in any way. The Boll Weevil hibernates during the winter, and hence woods and swamps are most favorable for its location. Texas, being for the greater part prairie land, and having adopted the cultivation preventatives—early planting, stalk burning in fall, and frequent plowing—has not suffered so much as expected. The weevil has now gone eastward to Louisiana, and on into, and as far East as Mississippi. These lands are quite more favorable for its work, and this, together with the condition of labor in this section, gives promise that the boll weevil will cause quite a good deal of trouble here, and a probable

revolution of the system of agriculture in regard to labor.

Cotton has in the past been cultivated largely by a shiftless race—the Negro. Land was rather cheap, and hence the plan of extensive farming was used. The planting of cotton was done any time from April 1st to May, and often quite later. The writer has seen green corn in early summer cut out of a field in order to plant cotton, and an appreciable amount of this crop was gathered in the fall. This was, however, done by a very progressive white farmer, when it was seen the corn was going to burn in the field. I merely cite this instance as an example of how variable the methods and time for its cultivation can be, and still a fair crop returned. Such a crop is exactly suited for the Negro, as long as land is cheap and there is no pest. He has been share renting land, and raising cotton for the past forty years. He was a marginal producer. With land values rising, however, and the boll weevil in the field, while labor only can be depended on to meet the situation. Negro would have never thought of the cultivation methods now used, after shown he would be negligent in carrying them out, and in some cases take no heed at all. The white man, on the other hand, is ever alert and ready to grapple with any foe. He stands like a rock, his resolutions rising with the difficulties to be faced. In Texas white farmers are in a greater proportion than in any other Southern State where cotton is the principle crop, and to this fact, together with the lack of woods for weevil hibernation, is attributed Texas success in combating the weevil.

Farm class Negroes in the South have been divided into three groups:

1. The day laboring group.
2. The tenant or share rent group.
3. The land-owning group.

The third group I regard so small as to be almost unappreciable, and I shall not deal with it. The first two classes are the ones of greatest importance, and it is here that a change is expected. Will the rise in land values, together with the boll weevil, increase the day laboring group by decreasing the tenant group; or will it increase the tenant group by decreasing the day laboring group? As pointed out before cotton has been raised or produced on the margin, extensive farming used, no care taken of land other than to keep down weeds, and no pest of great importance known. Now, however, with land values rising, a tendency to intensive farming, and the boll weevil in the field, we can easily see the situation is entirely changed. The Negro has never, at any time, done anything to indicate that he can meet these conditions. He lacks management, and rarely if ever evolves a new plan for the success of any operation. Even after being shown, he neglects some of the essential points. All of these, then, the writer thinks will tend to reduce the share tenant group. The members of this group will be replaced by white men, who are capable of carrying on intensive farming. The Negro will find himself in the day labor group.

Another change may take place. The Negro race has always been found to be of a roving spirit. Renters generally did not stay on the same farm over one or two years; day laborers rarely with one man more than one month, and in one community seldom for a number of years. These renters, being put into the day laboring class, will increase this spirit, and there will very probably be quite a migration to the North during the next few years. It has been predicted that the census of 1920 will show

The International Live Stock Show

Since the date of another great international is near at hand a word or two about this greatest of the great live stock shows will not be amiss.

The beginning of this exposition may be traced to the meeting of the National Association of Exhibitors of Live Stock,

to finance such a show. This was the one thing lacking. The show needed a home and finances. With these provided the official endorsement by a conference between the representatives of the Pedigree Register Association and the officials of the Union Stock Yards was



VIEW OF CHICAGO STOCK YARDS

Photo by Marsh

held at Springfield during the Illinois State Fair of 1899. The Union Stock Yards Co. was its sponsor and the support of the leading exhibitors was promised. The "big show" sentiment spread like wild-fire. A final court of appeal was needed and esired by all the prominent breeders. Cognizant of this "big show" sentiment permeating the industry, appreciative of the interdependence of the interests of the producer and the marketmen, and desirous of enforcing the fact of Chicago's supremacy in the live stock trade, the management of the Stock Yards offered

quickly executed. This conference met at the Stock Yards in November, 1899. Plans had been carefully matured by those most deeply interested and action rather than talk was the order of the hour. Officers were elected and a constitution drawn up. It was decided to held the International the first week in December, the first one to be pulled off in 1900. Thus much history was quickly made. "It is the closest and most powerful union of the producing, the marketing and the consuming interests that has ever been effected in the live stock industry."

This show was probably pregnant of great results from the first. Reports of the show held in 1900 paint in glowing terms the stupendousness and magnificence of the exhibit. It was beyond all expectations. Even the ones most intimately acquainted with the show were surprised to see to what magnitude their little plan had evolved. "Humanity swarmed. The pressure of the people was terrific. On Monday night the gates were closed before eight o'clock and thousands of disappointed people were turned away."

Keeping this description in view it is interesting and instructive to study the entries of the different years, noting the fact that if this show was so great, how would one describe the later shows.

BREEDING CATTLE.

Breeds.	1908	1907	1906	1900
Short Horns	257	263	296	167
Herefords	244	183	167	188
Aberdeen Angus	185	168	133	123
Galloways	53	109	69	113
Red Polls	86	113	100	59
Polled Durhams	63	68	48	72
Total	858	903	813	722

FAT STEERS.

Breeds.	1908	1907	1906	1900
Short Horns	69	93	53	21
Herefords	42	32	28	13
Angus	90	64	42	13
Galloways	15	15	20	1
Red Polled	7	10	9	6
Polled Durhams	6	14	8	..
Grades	105	131	94	91

BREEDING SHEEP.

Breeds.	1908	1907	1906	1900
Shropshires	154	257	227	101
Southdowns	29	11	26	41
Oxfords	12	33	31	23
Hampshires	84	89	48	86
Dorsets	49	73	52	25

Cheviots	16	30	23	20
Cotswolds	53	52	44	41
Lincolns	39	64	36	13
Leicesters	12	20	9	11
Rambouillets	90	133	106	23
Total	536	862	602	294

FAT SHEEP.

Breeds.	1908	1907	1906	1900
Shropshires	25	53	35	47
Southdowns	37	47	22	23
Oxfords	9	10	16	19
Hampshires	22	14	15	19
Dorsets	29	14	12	6
Cheviots	28	20	16	8
Cotswolds	33	21	24	14
Lincolns	13	35	28	3
Leicesters	5	23	8	8
Rambouillets	27	11	..	..

HORSES.

Breeds	1908	1907	1906	1900
Percherons	218	163	174	91
Clydesdales	111	111	89	60
Shires	171	87	94	33
Belgians	128	94	73	15
Suffolks	..	..	..	2
Totals	628	455	430	201

The breeding class of swine was discontinued in 1903, but will be continued again this year. In 1900 there were eight breeders exhibiting Berkshires, eleven breeders exhibiting Poland Chinas, four exhibiting Chester Whites, five competing for honors in the Duroc Jerseys. And there were nine exhibitors in the Fat Hog Class. In 1908 258 fat hogs were shown.

These figures show that the interest is growing in this, the greatest of live stock shows, and that this great annual event is becoming more and more the final court of appeal every year. The champions of the leading shows of the world, in fact, the finest specimen of cattle, horses, sheep and swine that the country produces will here compete for supremacy and final honors.

Subscribe for THE STUDENT

The National Dairy Show

By Richard Faxon

Wednesday evening, October 13th, Vanatta, Story and myself left with Professor Plumb for Milwaukee, to enter the students' judging contest at the National Dairy Show. This was the fourth show to be held and exceeded all the previous ones in point of attendance. The displays of supplies, machinery and appliances were also record breaking; while the exhibits of dairy cattle were the largest and finest in the history of the shows.

After an all night's ride we reached Chicago and had our breakfast at the Boston Oyster House. We left Chicago at 9:30 a. m. and arrived in Milwaukee at 11:30, going at once to the Plankinton Hotel, where we engaged rooms. After lunch we went out to the new Auditorium, where the Dairy Show was held; this show being the first time the building has been used. It is a mammoth structure, built of red brick, with a tile roof similar to those of many of the University buildings. It covers a whole city block, can easily accommodate 10,000 people, and cost \$500,000. We students were not allowed to remain in the building before the contest took place, so that we had to go back down town, and finally wound up by "taking in" a vaudeville show. Thursday evening we had our final instructions from Professor Plumb, and were given a few hints by Tom Dempsey of Westerville. We all turned in rather early to be in good shape for the next day.

Friday was the day of the contest, and we had to be at the Auditorium by 8 a. m. The contest was late in starting, it being about 10 o'clock before we had the first ring. The rules were read to us, and it was decided that there

should be no communication at all between the students. There were five groups, containing from five to seven fellows. We were given 15 minutes to place each ring, and then had to go before the judge and give within three minutes our reasons for so doing.

The first ring was one of Guernsey bulls, then came Ayrshire, Guernsey and Dutch Belted cows in order. It was about 2 o'clock when we knocked off for lunch. Jersey bulls came first after lunch. The band which furnished music for the afternoon and evening performances of vaudeville was playing directly at the ring side. It was mighty ticklish work judging those high-strung Jerseys with that sort of an uproar. Holstein bulls came next, followed by Jersey cows, which was a beautiful ring, and finally Holstein cows; eight rings in all.

Nebraska was first, and Cornell second in the final ranking. Ohio State won the cup offered by the Ayrshire Breeders' Association, scoring 259 out a possible 300. The standing of the Colleges was as follows out of a possible 2100:

University of Nebraska.....	1662.7
N. Y. State Col. of Agriculture.	1626.0
University of Missouri.....	1610.0
University of Minnesota	1509.0
Iowa State College	1501.0
Pennsylvania State College....	1483.0
Ohio State University.....	1444.0

After the contest we had supper, and talked over our placing of the various rings. Going back to the show, we spent several hours looking over the exhibits and the herds of cattle. The displays of machinery were wonderful in their number and variety. The Dairy Divi-

(Continued on page 26.)

Cost of Producing the Corn Crop

By Prof. H. C. Price

Corn is the most important crop produced in the United States. The annual production is between two and one-half and two and three-quarters billions of bushels annually, grown on about one hundred million acres.

The comparative acreage production and farm value of the principal farm crops is shown in the following statistics for the crops of 1908:

	Acreage.	Production.	Farm Value.
Corn	101,788,000	2,668,651,000	\$1,616,145,000
Wheat	47,557,000	664,602,000	616,826,000
Hay	46,486,000	*70,798,000	635,423,000
Cotton	32,444,000	†13,241,799	588,814,828
Oats	32,344,000	807,156,000	381,171,000

* Tons. † Bales.

The corn crop, while the most valuable, is also the most expensive to produce and responds more abundantly to intensive culture than any of the other

general farm crops. While most farmers know in a general way the cost of producing a farm crop, few men can be found who can tell accurately what it is costing them, either in time or money, to produce their corn. The cost of producing a crop as expressed in dollars and cents in a variable quantity, depending upon the wage paid for the labor and upon the efficiency of the labor employed. As a basis of comparison of the cost of producing a crop in different sections, the time required to perform an operation is more accurate than the cost of performing the operation. If the time required is known, the cost can readily be determined for any section based upon the prevailing wage in that particular community.



UNIVERSITY CORN FIELD

In the production of the corn crop on the farm of the Agricultural College of the Ohio State University, accurate record is kept of the cost of producing the crop and every hour spent on the crop is charged against it.

In the following table is given the results that have been obtained from representative fields during the past four years. The entire acreage is not included in any one year as a part of the crop is put in the silo; a part cut and fed green from the field. The areas that are included are representative and of the areas not included, some have produced more and some have produced less per acre and the cost of producing them has varied likewise.

TABLE SHOWING THE TIME REQUIRED TO PRODUCE THE CORN CROP ON THE OHIO STATE UNIVERSITY FARM DURING THE PAST FOUR YEARS.

Operation.	1905 Hr.	1906 Hr.	1907 Hr.	1908 Hr.
To plow one acre.....	5.7	5.9	4.4	7.7
To disk one acre.....	1.6	2.3	.84	3.08
To harrow one acre	1.7	1.22	2.88	1.64
To roll one acre.....	...	...	...	.84
To plant one acre.....	1.4	1.4	.91	.94
To replant one acre.....	...	...	.59	1.3
To cultivate one acre....	8.2	8.9	6.02	4.8
To hoe one acre.....	4.4	9.	15.	8.5

The above table shows very plainly that the more work put on the land before planting, the less time required for cultivating the crop. The variation in time required for the operation is due in part to the number of horses used and to the season. In 1907, a gang plow was used with four horses to do part of the plowing and as a result the time required was reduced, but in the following table, which shows the cost of these operations based on the scale of wages used here, the difference in cost is not as great as the difference in time would indicate.

TABLE SHOWING THE COST OF THE DIFFERENT OPERATIONS IN PRODUCING THE CORN CROP OF THE OHIO STATE UNIVERSITY DURING THE PAST FOUR YEARS. SCALE OF WAGES USED IS 15c 17½c PER HOUR FOR HAND LABOR AND 35c PER HOUR FOR MAN AND TEAM.

Operation.	1905	1906	1907	1908
To plow one acre....	\$2.00	\$2.09	\$1.85	\$2.70
To disk one acre....	57½	.82	.36	1.11
To harrow one acre. .	.60	.44	1.05	.60
To roll one acre.....	...	...	...	.29
To plant one acre....	.50	.52	.31	.32
To replant one acre. .	...	...	.08	.23
To cultivate one acre	2.75	8.23	2.01	1.68
To hoe one acre.....	.64	1.35	2.59	1.27
Total cost	\$7.06½	\$8.45	\$8.25	\$8.20

The cost of operations are in part due to climatic conditions as shown in the record for 1908. A wet spring that delayed the plowing and preparation of the land accounts for the excessive cost of preparation for planting, while an exceptionally favorable season for tending the crop accounts for the reduced cost of cultivation.

The cost of harvesting has not been included in the above table, as a part of the corn was cut by the shock and husked by the bushel and a part by the day. The actual cost per acre of harvesting the crops is given below; the price paid for cutting the corn when cut by the shock varied from 6c to 7c per shock ten hills square and, for husking, from 5c to 6c per bushel.

TABLE SHOWING COST PER ACRE OF GROWING, HARVESTING, AND CRIBBING CORN CROP ON THE OHIO STATE UNIVERSITY FARM FOR THE PAST FOUR YEARS.

	1905	1906	1907	1908
Cost of growing as shown in previous table	\$7.06½	\$8.45	\$8.25	\$8.20
Cost of cutting, husking and cribbing	6.76	7.07	8.75	9.19
Cost of seed corn..	.25	.25	.25	.25
Total cost	\$14.07½	\$15.77	\$17.25	\$17.64

The most important factor has not yet been touched upon and that is the yield per acre and the cost per bushel of producing the crop.

In the following table is given the number of acres included in the records for each year; the yield per acre on these areas and the cost of production per bushel of grain, disregarding any value of the corn stover in the calculations:

	1905	1906	1907	1908
Number of acres	14	19.5	38.8	60.1
Yield per acre	71.4	55.5	74.2	79.8
Cost per bushel to produce	20c	29c	23c	22c

(Continued on page 26.)

Live Stock of Greene County

There are probably more pure bred live stock in Green County than in any other county in Ohio. Though it does not rank so high in the quantity of production, in quality Greene County stands as one of the leading counties. It is reported that within a radius of 20 miles of Xenia there are more pure bred herds than in any other district that size in the world. The population of the county exceeds fifty thousand, with about fifteen thousand located in Xenia, its county seat. The land is rolling and in some parts rather hilly, affording excellent opportunities for permanent pastures. Besides the production of live stock, the principal crops are corn, wheat, oats, rye, hay, potatoes and some tobacco.

An annual two-day trip is taken by the stock judging class to this section, visiting many of the breeders, especially sheep breeders. This year they were favored with excellent weather and were able to visit five of the prominent sheep breeders and one very prominent cattle breder. Very cordial treatment was extended them throughout the whole trip by the breeders. They were very willing to put the boys right on type and as a whole talked quite freely of the merits and demerits of each individual. This feature is to be highly commended, for as students that is what we go down there for. We want the instruction that old experienced breeders can give us.

We visited J. C. Williamson's Ox-fords. He and his son were very successful in this year's show circuit. They have an aged ewe and a promising lot of young stuff that is hard to beat.

W. D. Cherry's Hamshires were next inspected. Mr. Cherry is very strong this year. At the State Fair he was first and second in breeders' flocks, and though fourth in ram lamb, it must have taken some superior ones to beat him.

Mr. Jas. R. Bickett's Lincolns were also subjected to study. He brought out the champion ewe at the State Fair. She has a strong-backed, typey individual, and it was easy to get right on conformation, head and wool by inspecting her.

The Cotswold was studied and inspected at Mr. Watt's farm near Xenia. He has a good herd of Cotswolds, typey feminine breeding ewes, and rams with plenty of masculinity. Mr. R. C. Watt, of Cedarville, a Southdown breeder, showed us some wonderful blocks of mutton. His sheep were smooth, compact, and possessed a very pleasing character. Mr. Watt is also a great breeder of Duroc Jerseys. He showed us several good specimens of the breed, making us regret that we had not more time to spend on them.

The last breeder that we visited was D. Bradfute & Son. Here we found some very attractive "doddies." And we were much pleased when Mr. Bradfute brought out Lucy's Prince. We had heard of this great bull and desired very much to see him. He has been shown for ten consecutive years and is still a very stylish bull. He had it all his own way until his son, Leroy 3rd of Meadow Brook, came into the arena. He has another son, Hal of Meadow Brook, placed third at the State Fair, that is a thick-fleshed, rotund, remarkably masculine animal.

THE AGRICULTURAL STUDENT

A MONTHLY MAGAZINE DEVOTED TO THE
INTERESTS OF FARMING, STOCK-RAISING,
DAIRYING AND CREAMERY WORK

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COLUMBUS, O., NOVEMBER 15, 1909.

Editorial

We beg to announce that owing to the illness of the Editor, The Student this month has been gotten out largely through the efforts of the Editorial Staff and accordingly under some handicap. It is with no little doubt and hesitation that we present for your consideration the result of our labors and trust that you will overlook any discrepancies and errors—we acknowledge that there are many—and take into consideration the conditions under which the magazine has been published.

We wish to call the attention of our readers to the tenth annual International Live Stock Exposition held in Chicago, commencing Nov. 29. It is something which all agricultural students, especially those interested in a better type of live stock on our farms, should attend. There will be shown the best that the country produces and it certainly behooves every student of Animal Husbandry to be present and it is expected that a large number of students will attend.

The plans, subject to change, are to leave in a party Sunday morning, Nov. 28, arriving in Chicago Sunday night, thus giving a chance to see the wonderfully fertile farm lands of Western Ohio, Indiana and Illinois. One of the professors will be in charge of the party until located. Ohio State University headquarters will be at the Kaiser Hof Hotel, on Clarke Street, where rooms can be secured at \$1.00 per day. Meals can be secured for almost any price at the nearby restaurants. It is planned to stay three days. The fare is \$10.50 for the round trip and the total cost should not exceed \$20.00.

It is certainly up to the students to attend this show, especially as the University will be well represented in the show ring and we hope will show some prize winners. The University show will include twelve cattle, consisting of Aberdeen Angus, Short Horn, Gallo-way, Red Polled and crossbred steers and heifers, Berkshire, Yorkshire, Duroc Jersey and crossbred hogs and some fat wethers.

All those expecting to attend should give their name to Prof. Plumb at once, in order that accommodations and free passes to the exhibition may be secured for them.

Agricultural Extension School

Great interest is being taken in the agricultural extension schools which are being conducted throughout the different counties of the state by the Ohio State University under the superintendency of Prof. A. B. Graham.

The school held at Wilmington, Clinton County, Oct. 25-30, was especially encouraging. It was held in the College buildings. There were in regular attendance between 175 and 200 men and women. And had it not been for such good weather, which kept many farmers at home, doing the fall work, there would have been many more in attendance. As it was, some left their work and drove 12 to 15 miles to the meeting. This school was attended by Senator Clevenger's wife.

Courses in soil fertility, farm crops, and animal husbandry were given for men; and for the women a course in home making. Great interest and enthusiasm was shown by all who attended. Many questions were asked of the professors, and all present were eager to learn.

At Rutland, Meigs County, 60 members were in attendance. Courses in horticulture, soil fertility, farm crops and home making were given. Senator Rathburn's wife was enrolled in the home maker's course.

On Saturday, October 9th, a meeting of the township and village superintendents of Montgomery and adjoining counties was held at the Harrison Township High School building near Dayton, for the purpose of receiving instructions in four different lines of agriculture, viz., horticulture, farm crops, dairying, and judging dairy cattle. Professors V. H. Davis, A. G. McCall, and Oscar Erf, of the State

University, were the instructors. About thirty teachers were present. Professor Davis gave a practical demonstration in plant propagation by showing how plants were propagated from layers, stolons, cuttings, buds, and grafts. Professor McCall conducted the teachers to a nearby corn field where he could point out the points of excellence in field corn. Professor Erf used a small Babcock milk tested in showing how to test milk for butter fat. At the close of the session every person in attendance walked one-half mile north to a dairy farm where Professor Erf gave a practical demonstration in the judging of a dairy cow.

A two-day dairy, horticultural and poultry special will be run over the Ohio R. & W. from Bellaire to Zanesville. The president of the road has offered gratuitously train service and advertising. The lecturers on the train will be Mr. Green, of the Experiment Station; Mr. Homer Jackson on Poultry, and Prof. Paddock on Horticulture. An exhibit of fruit will be carried on the train.

Miss Ruth Postle, '09, B. A. B. Sc., has been employed in the agricultural extension work.

Mrs. C. W. Fold is engaged in the agricultural extension work.

Mr. A. S. Neal, of Macedonia, has charge of the dairy side of the agricultural extension work.

A horticultural special will be run over the B. & O. N. W. and B. & O. S. W. during the week of Nov. 29.

News Notes

The Ohio Berkshire Sale

In the original plan for the Live Stock Pavilion I had contemplated a basement floor with ample stall room, so that fine accommodations might be provided at the University for live stock auction sale of pure bred animals. Lack of funds would not enable us to put in these stalls in a basement. However, by the use of the north wing of the cattle building, we were able to offer accommodations to the Ohio Berkshire Association for their semi-annual sale, which was held on October 20. This was the first sale of the kind ever held here, though similar sales have been held at the agricultural colleges in Wisconsin, Iowa, Michigan and perhaps elsewhere. Such a sale is of considerable educational value to Animal Husbandry student, for it if necessity includes numerous fine individuals of the breed being sold.

The sale of Berkshires on Oct. 20 included 48 head, and they sold for an average price of nearly \$30.00. The University paid the highest price of the sale, \$92.50, for the sow Masterpiece Premier Duchess 2d, 115230, consigned by Mr. L. B. Frost, of Springfield, Ill., who managed the sale. This is a very fashionable bred individual, with much individual merit in conformation. Since purchase she has presented the University with a litter of ten pigs. The fairly well known boar of the University herd, Pastmaster 4th, 91,920, the sire of some of our best show barrows, was sold for \$50 to C. C. Richardson, of Gledale, O. The boar was a great bargain at that price. The University also consigned four young sows to the sale, and these ranged in price from \$22.50 to \$42.50 each. A number of excellent pigs sold for much less than their ac-

tual value, while a number had been consigned to the sale that should not have been sent here at all.

The attendance was fairly good, the representative Berkshire breeders of Ohio being present. In his report on the sale in the Berkshire World, Mr. Frost paid a nice compliment to our judging pavilion, and also stated that he had never seen a sale better managed.

In addition to Mr. Frost as sale manager, who is the leading man in this work in this country, the animals were auctioned off by Col. Fred Andrews, of Ragersville, O. The committee on the sale, representing the Association, was Messrs. A. E. Fisher, Orient; W. H. Palmer, Thurston, and John F. Myers, of Millersburg. This committee did its work in a way to receive universally favorable comment. A business meeting of the Association was held at night at the Northern Hotel, and it was decided to hold a brood sow sale in February, preferably at Columbus and at the University, if arrangements could be made to hold it there.

PROF. C. S. PLUMB.

The second meeting of the Agricultural Society was attended by about one hundred students. This is not enough; the lecture room should have been full, especially when we were given a very instructive and interesting lantern slide lecture on the French Horsemen. One of the most interesting slides was that showing the multitudes of people that attend the French racing events. Prof. Plumb was extended a vote of thanks, and after the transaction of some business the meeting adjourned.

Mr. Johnson's Shorthorns are becoming almost as familiar to the advanced stock judging class as they are to him or Mr. Bruce. We have made several trips to his farm. Still, we always find something new each trip.

Monday afternoon, Nov. 8, 1909, the advanced stock judging class paid Lee Palmer a visit. Lee lives near Wagrum, O., and is breeding Shropshires, Southdowns, and I believe he said he had some Dorsets on the farm, too. He made a very creditable showing this year in the Shropshire ring against the imported herd.

The third number of The Ohio Forester, published under the auspices of the Ohio State Forestry Society, and devoted to the forestry interests of Ohio, has just been issued. It comes in a new and greatly improved form. We congratulate the Editor, C. W. Waid, who is a graduate of the old department of Horticulture and Forestry.

On Nov. 9 Prof. Lazenby delivered an address before the Altrurian Club. The subject was "What Trees Stand For," and it elicited much discussion.

Prof. C. S. Plumb was confined to his home for several days on account of sickness, but is back at his office now.

Prof. Marshall was at New York, attending the Horse Show last week. He judged the Clydesdales and Shires at the show.

The following students have been selected to represent the Ohio State University at the students' judging contest at the International Live Stock show: Geo. A. Dix, Thos. D. Philips, O. W. Reagin, D. C. Mote, L. L. Mowls.

Lectures to Delivered During Winter Course

Charles E. Thorne, Wooster, O., Director of the Ohio Agricultural Experiment Station.

Joseph E. Wng, Mechanicsburg, O., Associate Editor of the Breeder's Gazette.

C. G. Williams, Wooster, O., Agriculturist of the Ohio Agricultural Experiment Station.

E. R. Root, Medina, O., Editor of Gleanings in Bee Culture.

J. J. Crumley, Wooster, O., Assistant in Forestry, Agricultural Experiment Station.

Charles McIntire, Charleston, W. Va., Supt. of Field Work of the West Virginia State Board of Agriculture.

A. R. Pickett, Clyde, O., Commercial Fruit Grower.

John F. Cunningham, Cleveland, O., Editor of Ohio Farmer.

W. A. Alsdorf, Johnstown, O., Member State Senate.

J. F. Keller, Newark, O., Potato Farmer.

E. S. Bayard, Pittsburg, Pa., Editor of the National Stockman and Farmer.

J. Warren Smith, St. Louis, Mo., Section Director of the U. S. Weather Bureau.

C. B. Galbreath, Columbus, O., Librarian of the Ohio State Library.

R. W. Dunlap, Kingston, O., Dairy and Food Commissioner of Ohio.

A. P. Sandles, Columbus, O., Secretary of the Ohio State Board of Agriculture.

Patronize our Advertisers

The National Dairy Show

(Continued from page 18.)

had a very instructive exhibit of photographs of object lessons in the producing end of dairying. They also had a demonstration herd showing the yields from various rations and the testing methods of various breeding associations. The exhibits of supplies and machinery were on the main floor, some of the in the arena and the rest in the surrounding rooms. One of the most interesting exhibits was a model creamery in operation. The end of the arena next to the stage was fenced off for a show ring. Around the arena were two galleries, which were well filled in the afternoon and evening.

The dairy cattle were in the basement, rather an out-of-the-way place for such an important part of the show, and many visitors failed to see them. All the breeds of dairy cattle were well represented, the Jersey and Holstein breeds being especially strong. The Jersey Cattle Club had three of the greatest cows of that breed on exhibition—Jacoba Irene, Rosaire's Olga 4th's Pride, and Owl's Nutley 5th. E. L. Zehring was the only Ohio exhibitor, but he did well with his Holstein herd.

Agriculture in the South and Its Relation to the Negro

(Continued from page 15.)

the largest increase of Negroes in the North ever known.

Agriculture, then, in the South, on account of rising land values, and the boll weevil, together with a general awakening, is on the verge of a revolution, which will result in more intensive farming carried on by white men. The Negro becomes the day laborer, and a migration to the North will probably result.

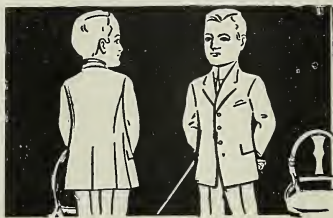
Cost of Producing the Corn Crop

(Continued from page 19.)

The cost of production has been figured exclusive of the cost of manuring the land, rent for the land, or charge for the machinery used in the production of the crop other than the rate at which team labor has been charged. It has been thought that a charge of 35c per hour for man and team is sufficient to pay for the use of any machinery used in the production of the corn crop.

The value of the corn stover and the rent for the land are factors that may be considered for individual farms as occasion may arise. The foregoing records show the cost of the different operations under conditions existing on the University farm and in such a way that they may be applied to other farms.

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Co-operation in Road Improvement

(Continued from page 11.)

sion of the Department of Agriculture the Postoffice Department has begun in order to facilitate rural delivery by the improvement of country roads.

Various organizations for the improvement of roads have been established within the last few years and are increasing to a remarkable extent. They consist of national, state and local organizations of various kinds. The gradually increasing interest along this line was represented by the recent meeting of the National Congress of Road Builders. This congress was a joint meeting of three Good Roads organizations: The American Road Makers' Association; The Good Roads Federation of Ohio; and the County Commissioners' Association, also of this state.

The Winter Course

Many of the farmer boys of Ohio who are unable to attend the long courses have signified their intentions of enrolling in the ten-week winter course beginning January 10, 1910.

The subjects taught in the course will be confined to agriculture and horticulture and will include the following: (1) Breeding and Feeding of Live Stock, (2) Breeds of Live Stock and Stock Judging, (3) Soil Fertility, (4) Farm Crops, (5) Farm Horticulture, (6) Farm Mechanics, (7) Farm Management, (8) Farm Dairying, (9) Veterinary Medicine. A part of the time in each of the subject, except soil fertility, farm management, breeding and feeding of live stock and veterinary medicine, will be devoted to laboratory or practice work.

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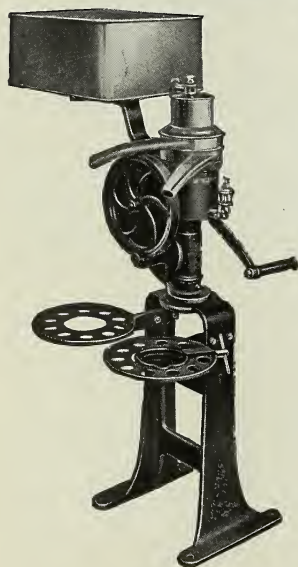
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